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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,927	03/30/2006	Werner Michel	GOR 223-KFM	5354
10/37 7590 11/14/2008 MILDE & HOFFBERG, LLP 10 BANK STREET SUITE 460 WHITE PLAINS, NY 10606				
EXAMINER				
PATEL, DEVANG R				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
11/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,927

Applicant(s)

MICHEL ET AL.

Examiner

DEVANG PATEL

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 4-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse to prosecute the invention of Group II, claims 4-13 is acknowledged. Claims 1-3 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 4-5 and 10-11** are rejected under 35 U.S.C. 102(b) as being anticipated by Lovett et al. (US 6225767).

a. **Regarding claim 4**, Lovett et al. ("Lovett") discloses an arrangement for friction welding [col. 1, lines 10-14] having movable member (i.e. oscillator) for moving parts to be joined which is powered by electromagnets with opposing actions [abstract; fig. 4]. Lovett discloses that an output of position sensors (i.e. displacement sensors- col. 24, line 1) which registers the X, Y position of the oscillator (40/42), is joined to an input of a controller 91/50/12' [col. 21, line 65 thru col. 22, line 27; col. 23, line 9 thru col. 24, line 11] that is linked to inputs of a

energization control circuit [fig. 2A] for energization of electromagnet system 15 [figs. 1, 5, 9].

b. **As to claim 5**, Lovett discloses that the controller (12') activates the power-circuit output stage (21) in such a manner that, in dependence upon the respective direction of movement of the oscillator (40/42), an electromagnet (15) supporting the movement is energized.

c. **As to claim 10**, Lovett discloses that trigger signal to energize the electromagnets occurs at a predeterminable fraction of the length of the oscillation after an oscillation's passage through zero [col. 9, line 45 thru col. 10, line 15; figs. 12A-D].

d. **As to claim 11**, Lovett discloses controller incorporating a pre-set integral-action component [col. 23, lines 9-23; col. 11, lines 15-55].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 6-9 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lovett et al. (US 6225767).

e. **As to claim 6**, Lovett discloses that the energization control circuit generates switching signals to increase, decrease (i.e. braking), or stabilize the

flux in the electromagnet system [col. 8, lines 18-54]. Lovett also discloses providing an improved amplitude tracking [figs. 12A-D; col. 26, lines 36-59]. It is not clear whether Lovett discloses that energization is halted upon reaching a predetermined oscillation amplitude. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement such feature in view of the fact that Lovett teaches that the force control system allows for efficient control of the force exerted on the movable member and also enables desired movement manner, such system being particularly useful in orbital welding, where relative motion is halted upon sufficient frictional heat at the interface [col. 21, lines 4-55].

f. **As to claim 7**, Lovett teaches that the energization control circuit may take many forms including conventional pulse width/frequency modulation, or switching devices 17,18 [col. 8, lines 51-67]. Lovett discloses “freewheel” (i.e. free-running) diodes in conjunction with the switching bridge, connected to the coils of electromagnets [col. 7, lines 5-20]. Lovett further discloses that one of ordinary skill in the art would appreciate that the a variety of switching schemes may be used to control the energization such as utilizing a full H-bridge [col. 8, lines 18-27]. In view of that, it would have been obvious to a person of ordinary skill in the art at the time of the invention to provide energization circuit as claimed in order to increase, decrease or stabilize the oscillation frequency depending on the control signal.

- g. **As to claims 8-9**, Lovett discloses that any particular switching scheme can be utilized as explained above. The claims would have been obvious because connecting free-running diodes in parallel, and alternating energization by other bridge arms would have yielded the predictable results of controlling the flux to a person of ordinary skill in the art at the time of the invention.
- h. **As to claim 13**, Lovett discloses that trigger signal to energize the electromagnets occurs at a predeterminable fraction as explained in claim 10 above, but is silent to its value. However, the claim would have been obvious because a person of ordinary skill in the art would pursue known fractions of the length of the oscillation such as 1/10, 1/5, 1/4, 1/2, 3/4 etc. within his or her technical grasp in an effort to effectively control the flux energization [col. 9, lines 45-65]. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.
5. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lovett et al. (US 6225767) as applied to claim 4 above, and further in view of Lotz et al. (US 5795419).
- i. **As to claim 12**, Lovett does not disclose determining a resonant frequency of an oscillating circuit. However, Lotz et al. (drawn to a method for adjusting frequency of an orbital welding system) discloses a welding head receiving a workpiece, resilient means to which the head is mounted, electromagnetic means for driving the head, and varying the operating frequency to determine a resonant frequency associated with a current minimum or power

minimum [col. 6, lines 21-42]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to determine a resonant frequency as shown by Lotz in the arrangement of Lovett in order to obtain an optimum geometrical configuration of orbital vibrations [col. 7, lines 1-10].

Conclusion

Claims 4-13 are rejected.

The rejections above rely on the references for all the teachings expressed in the text of the references and/or one of ordinary skill in the art would have reasonably understood from the texts. Only specific portions of the texts have been pointed out to emphasize certain aspects of the prior art, however, each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

Applicant is reminded to specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. 1.121; 37 C.F.R. Part 41.37; and MPEP 714.02.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVANG PATEL whose telephone number is (571)270-3636. The examiner can normally be reached on Monday thru Thursday, 8:00 am to 5:30 pm, EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./
Examiner, Art Unit 1793

/Kiley Stoner/
Primary Examiner, Art Unit 1793